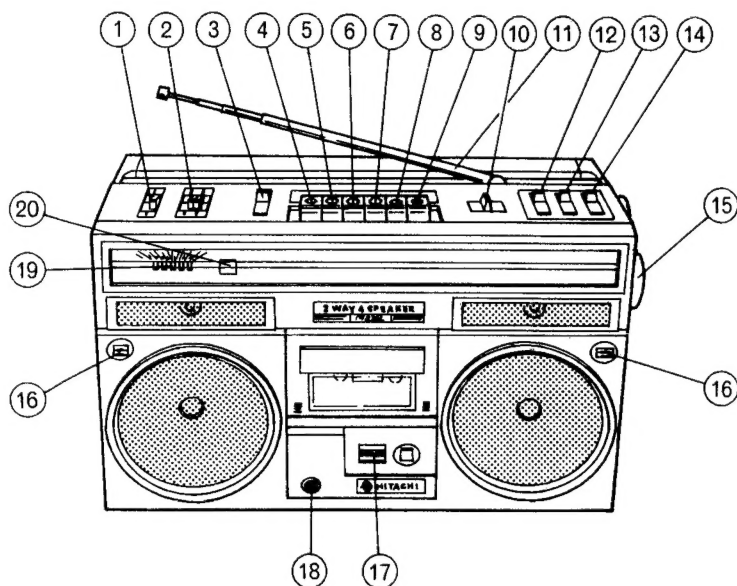


# **HITACHI** **SERVICE MANUAL**

**TK**
**No. 1669E**
**TRK-7250E, E(BS)**


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## KEY TO ILLUSTRATIONS

- |                       |                               |
|-----------------------|-------------------------------|
| ① TONE CONTROL        | ⑪ TELESCOPIC ANTENNA (AERIAL) |
| ② VOLUME CONTROLS     | ⑫ MODE SELECTOR               |
| ③ FUNCTION SELECTOR   | ⑬ AFC SWITCH                  |
| ④ PAUSE BUTTON        | ⑭ TAPE SELECTOR               |
| ⑤ STOP/EJECT BUTTON   | ⑮ TUNING CONTROL              |
| ⑥ PLAYBACK BUTTON     | ⑯ BUILT-IN MICROPHONES        |
| ⑦ FAST FORWARD BUTTON | ⑰ TAPE COUNTER                |
| ⑧ REWIND BUTTON       | ⑱ HEADPHONE SOCKET            |
| ⑨ RECORD BUTTON       | ⑲ LED LEVEL INDICATORS        |
| ⑩ BAND SELECTOR       | ⑳ FM STEREO INDICATOR         |

## SAFETY PRECAUTION

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes.  
Critical parts are marked with  in the schematic diagram and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

**CASSETTE TAPE RECORDER WITH FM/SW/MW/LW RADIO**

**Jan. 1982**

**TOKAI WORKS**

## SPECIFICATIONS

### GENERAL SECTION

Semi-conductors :	IC's : 3 Transistors : 16 Diodes : 12 LED's : 6 Varistor : 1 Varicap : 1
Power (Mains) Supply :	AC : 220V, 50 Hz (For E) 240V, 50 Hz (For E (BS)) DC : 12V (IEC R20×8 or equivalent)
Power (Mains) Consumption :	18W
Dimensions :	483(W)×265(H)×146(D)mm
Weight :	4.8kg (with batteries)
Power output :	3W/ch (T.H.D. 10%) 9W M.P.O. (AC operation)
Speakers :	120mm, 4 ohms×2 30mm, 4 ohms×2

### TUNER SECTION

Circuit System :	FM/SW/MW/LW 4-band superheterodyne
Tuning Range :	FM : 87.5 to 108 MHz SW : 6 to 18 MHz MW : 530 to 1605 kHz LW : 150 to 350 kHz
Sensitivity :	FM : 11 dB (pra.), 3 dB (max.) SW : 30 dB (pra.), 20 dB (max.) MW : 47 dB (pra.), 37 dB (max.) LW : 52 dB (pra.), 46 dB (Max.)

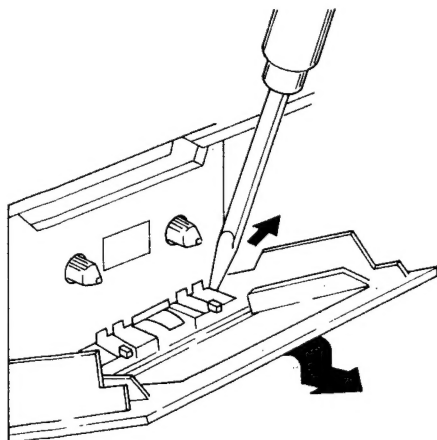
Intermediate Frequency :	FM : 10.7 MHz SW/MW/LW : 465 kHz
Antennas (Aerials) :	FM/SW : Telescopic antenna MW/LW : Built-in ferrite-core antenna

### TAPE RECORDER

Tape :	Cassette tape (C-30, 60, 90)
Tape Speed :	4.75cm/s
Recording System :	AC Bias, 55 kHz
Erasing System :	AC erase
Track System :	4 track 2 channel
Frequency Response :	Normal : 60 Hz to 10 kHz
S/N (Signal to Noise Ratio) :	45 dB
Wow and Flutter :	0.25% (WRMS)
Cross Talk :	65 dB (Between tracks) 40 dB (Between channels)
Erase Ratio :	60 dB
Input Sensitivity and Impedance :	Microphone : 0.6mV, 3.7k ohms Din : 0.5mV, 2.2k ohms
Output Level and Impedance :	Din : 700mV, 10k ohms EXT. Speaker : 4 ohms Headphone : 8 ohms
Fast Forward or Rewinding Time :	105 sec. (Using C-60)
Distortion :	3%
Motor :	DC Micro motor

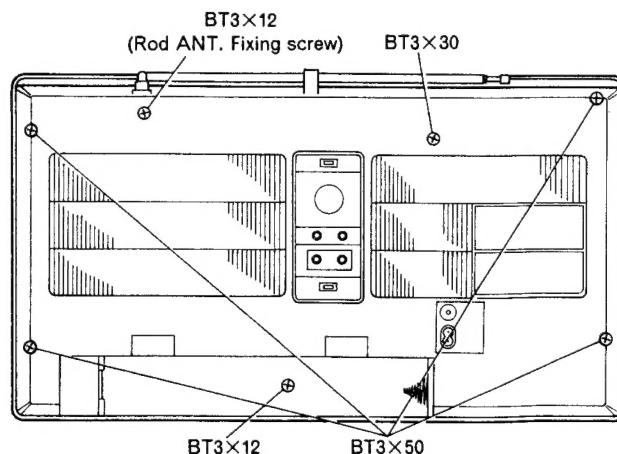
## DISASSEMBLY

### 1. Cassette lid

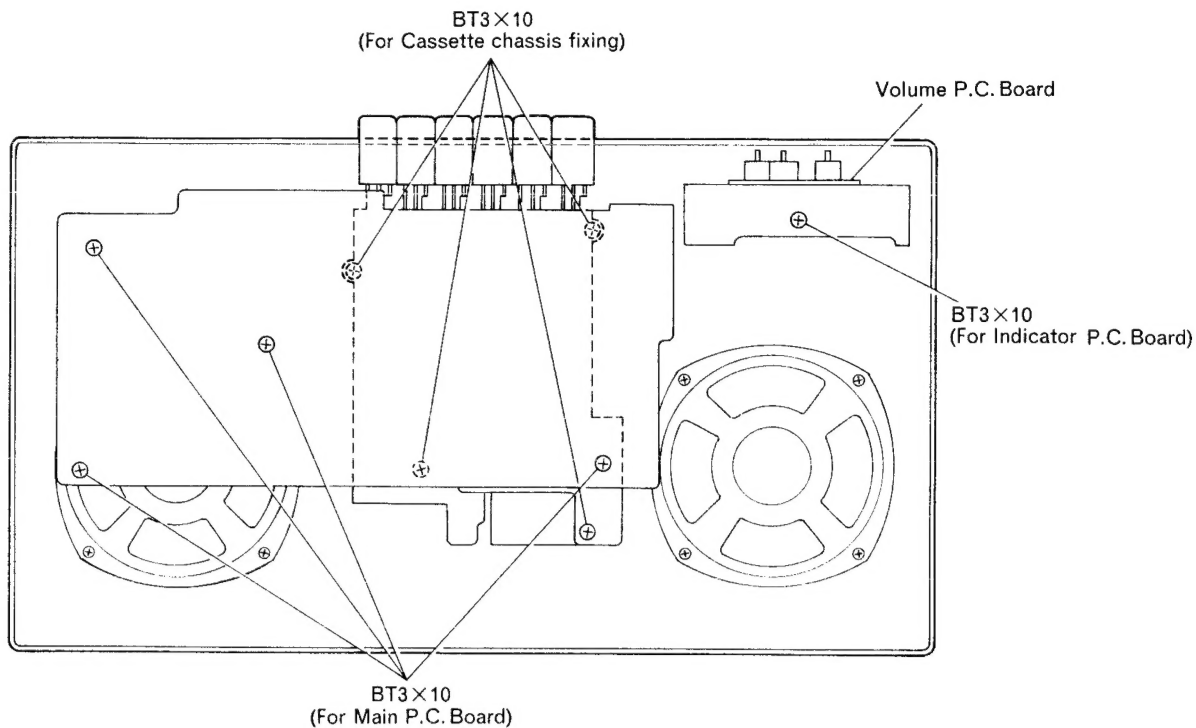


### 2. Rear case

- 1) Remove eight knobs (TONE, VOLUME L/R, FUNCTION, MODE, AFC, TAPE, TUNING).
- 2) Remove six screws.

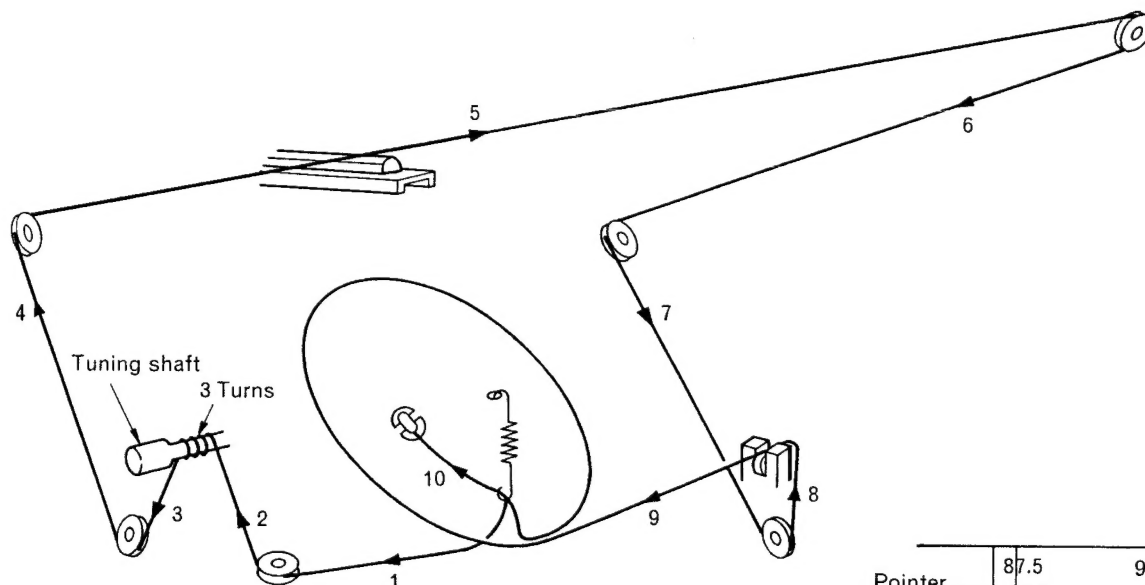


### 3. Main, Indicator P.C. Board and Cassette chassis



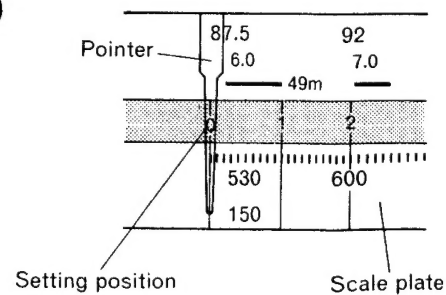
### DIAL CORD STRINGING

After removing the Main P.C. Board and Cassette chassis, string the dial cord as follows.



#### STRINGING METHOD

1. Turn the pulley fully clockwise.
2. String the dial cord in the direction of arrow (No. 1~10).
3. Set the pointer to setting position.



## ADJUSTMENT

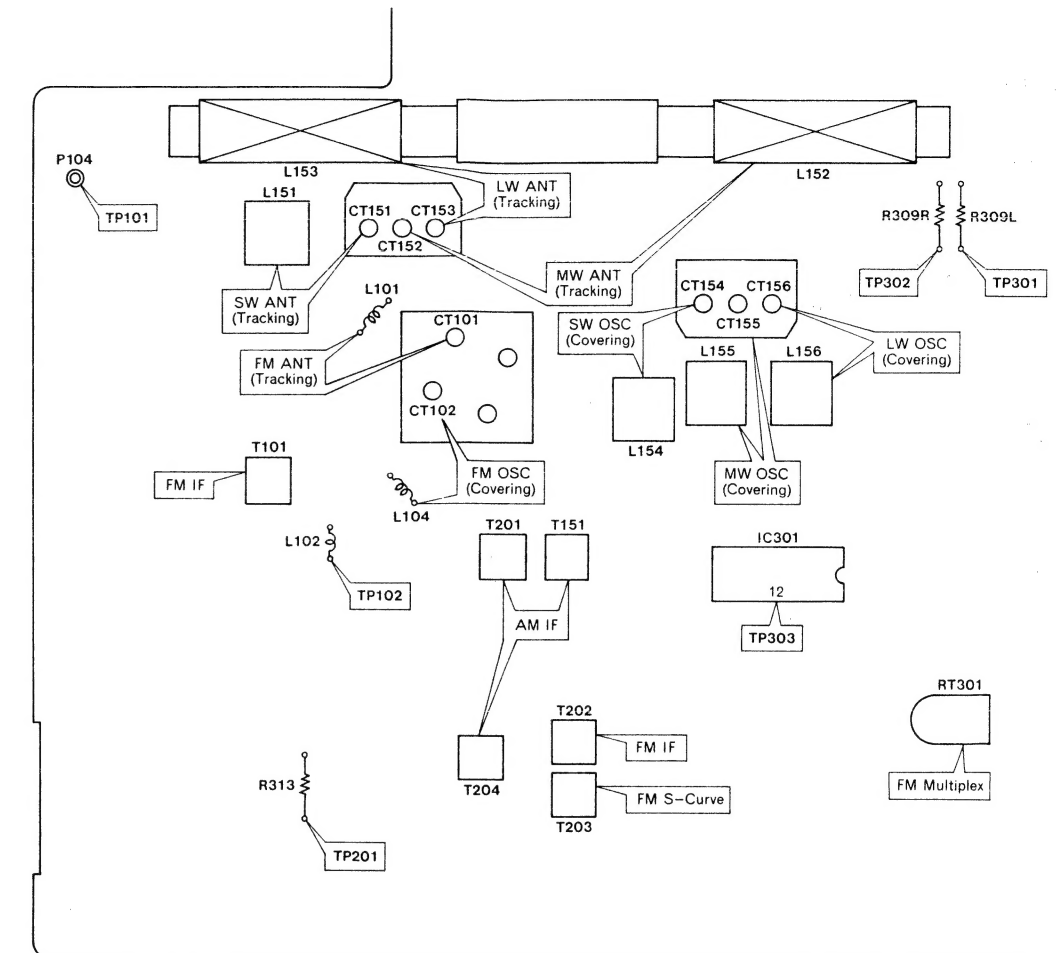
## 1. Tuner Section

\* For West Germany

Step	Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading			
		Measuring Instrument	Input Terminal	Output Terminal							
1	(1) FM IF	Turn T203 fully counterclockwise.									
	(2) S-Curve	• Genescope (10.7 MHz)	TP102	TP301 (TP302)	10.7 MHz	Highest	T101 T202	Note 1			
							T203	Note 2			
2	(1) FM OSC. (Covering)	• FM signal generator (400 Hz 30% mod.) • Oscilloscope • VTVM	TP101 (thru FM dummy antenna) (Note 3)	TP301 (TP302)	87 MHz (87.5 MHz*)	Lowest	L104	Output Max.			
	109 MHz (108 MHz*)				Highest	CT102					
	(3)				Repeat steps (1) and (2)						
3	(1) FM ANT. (Tracking)				90 MHz	90 MHz	L101	Output Max.			
	(2)								106 MHz	106 MHz	CT101
	(3)								Repeat steps (1) and (2)		
4	(1) FM MPX (Multiplex)	• Frequency counter	Connect a 10 $\mu$ F 25V electrolytic capacitor between the No. 2 pin of IC301 and ground.	TP303	—	—	RT301	19 kHz $\pm$ 200 Hz (Note 4)			
5	(1) AM IF	• Genescope (465 kHz)	Ferrite-core antenna (Note 5)	TP201	465 kHz	Highest	T151 T201 T204	Note 6			
	(2)				Repeat steps (1)						
6	(1) MW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM	Ferrite-core antenna (Note 5)	TP201	515 kHz	Lowest	L155	Output Max.			
	(2)				1650 kHz	Highest	CT155				
	(3)				Repeat steps (1) and (2)						
7	(1) MW ANT. (Tracking)				600 kHz	600 kHz	L152	Output Max.			
	(2)								1400 kHz	1400 kHz	CT152
	(3)								Repeat steps (1) and (2)		
8	(1) LW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM	Ferrite-core antenna (Note 5)	TP201	145 kHz	Lowest	L156	Output Max.			
	(2)				360 kHz	Highest	CT156				
	(3)				Repeat steps (1) and (2)						
9	(1) LW ANT. (Tracking)				160 kHz	160 kHz	L153	Output Max.			
	(2)								330 kHz	330 kHz	CT153
	(3)								Repeat steps (1) and (2)		
10	(1) SW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM	TP101 (thru SW dummy antenna) (Note 7)	TP201	5.8 MHz	Lowest	L154	Output Max.			
	(2)				18.5 MHz	Highest	CT154				
	(3)				Repeat steps (1) and (2)						
11	(1) SW ANT. (Tracking)				6.5 MHz	6.5 MHz	L151	Output Max.			
	(2)								16 MHz	16 MHz	CT151
	(3)								Repeat steps (1) and (2)		



## ADJUSTMENT PARTS LOCATION



### Note :

1. Feed in a weak signal to TP102 from the genescope. Adjust T101, T202 for maximum gain and the wave form indicated in Figure 1. If the center of the wave form cannot be lined up on the marker, adjust the right/left balance.

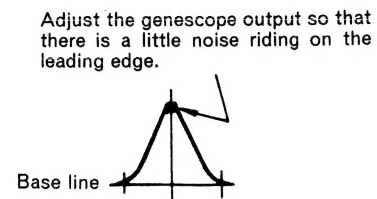


Fig. 1

2. Use the T203 core to form the S-curve shown in Figure 2. Adjust the symmetry of A and B about point C for linearity.

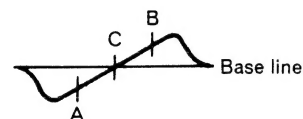


Fig. 2

3. FM dummy antenna shows Figure 3.

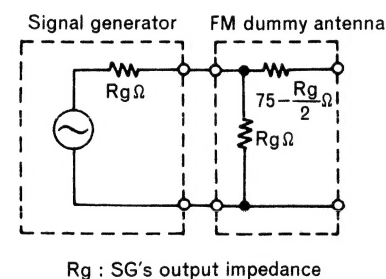


Fig. 3

### 2. Tape Recorder Section

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol.

Item	Adjustments	Measuring instrument & connection			Check tape	Mode	Adjust	Reading
		Measuring instrument	Input terminal	Output terminal				
1	Head azimuth	• VTVM	—	DIN socket	MTT-216R third section (10 kHz)	PLAYBACK	Azimuth adjusting screw	Output Max. (See Note1)

### Note :

1. When the maximum values of both channels are different, adjust to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.

4. Connect the frequency counter to TP303, via a resistor of 100kΩ.

5. Connect AM signal generator to loop antenna, bring near to ferrite antenna.

6. Feed in a weak signal from the genescope. Adjust T151, T201, T204 for maximum gain and the waveform of Figure 4.

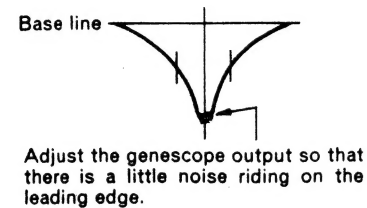


Fig. 4

7. SW dummy antenna shows Figure 5.

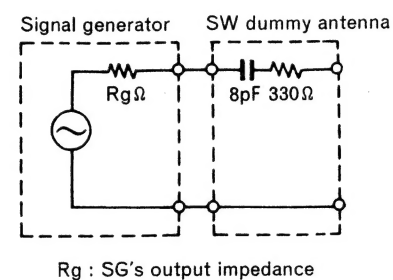


Fig. 5

## LUBRICATION

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point.

Lubricate the respective parts listed once every 1000 hours or once a year under normal conditions of use.

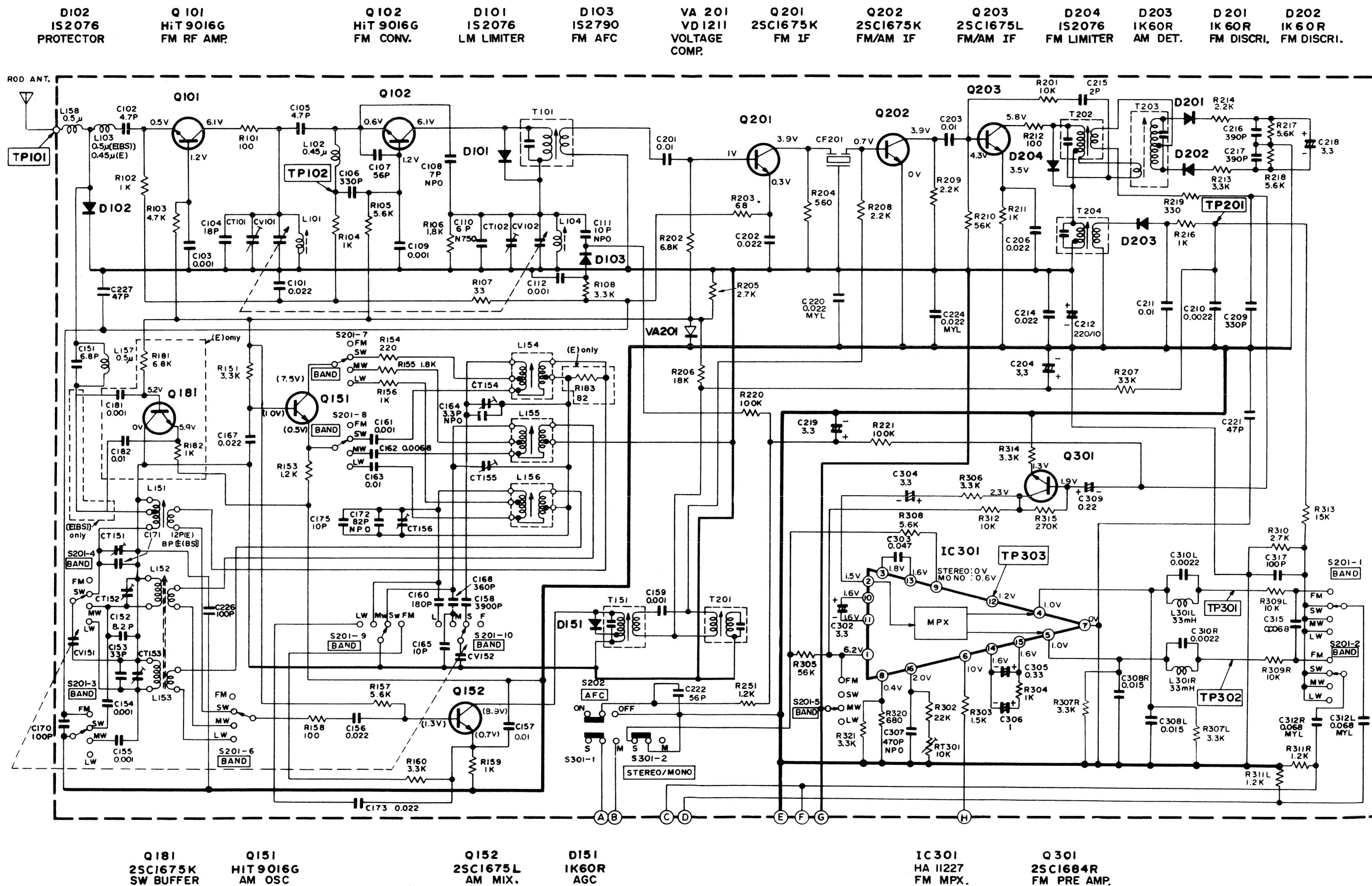
Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication point		Oil or Grease
Rotary section	Metal and metal	Pan motor oil (10W-40)
	Mold and metal	Sonic slider oil (#1600)
Sliding section	Metal and metal	Hitasol (MO-138)
	Mold and mold Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Froil (GB-TS-1)

## INSPECTION

Mode	Item	Pressure or Torque
Playback	Pressure of pressure roller	400g-600g
	Take-up torque	40g-cm-70g-cm
	Supply reel back tension	1g-cm-4g-cm
Rewind	Rewind torque	65g-cm-140g-cm
Fast forward	Fast forward torque	65g-cm-140g-cm

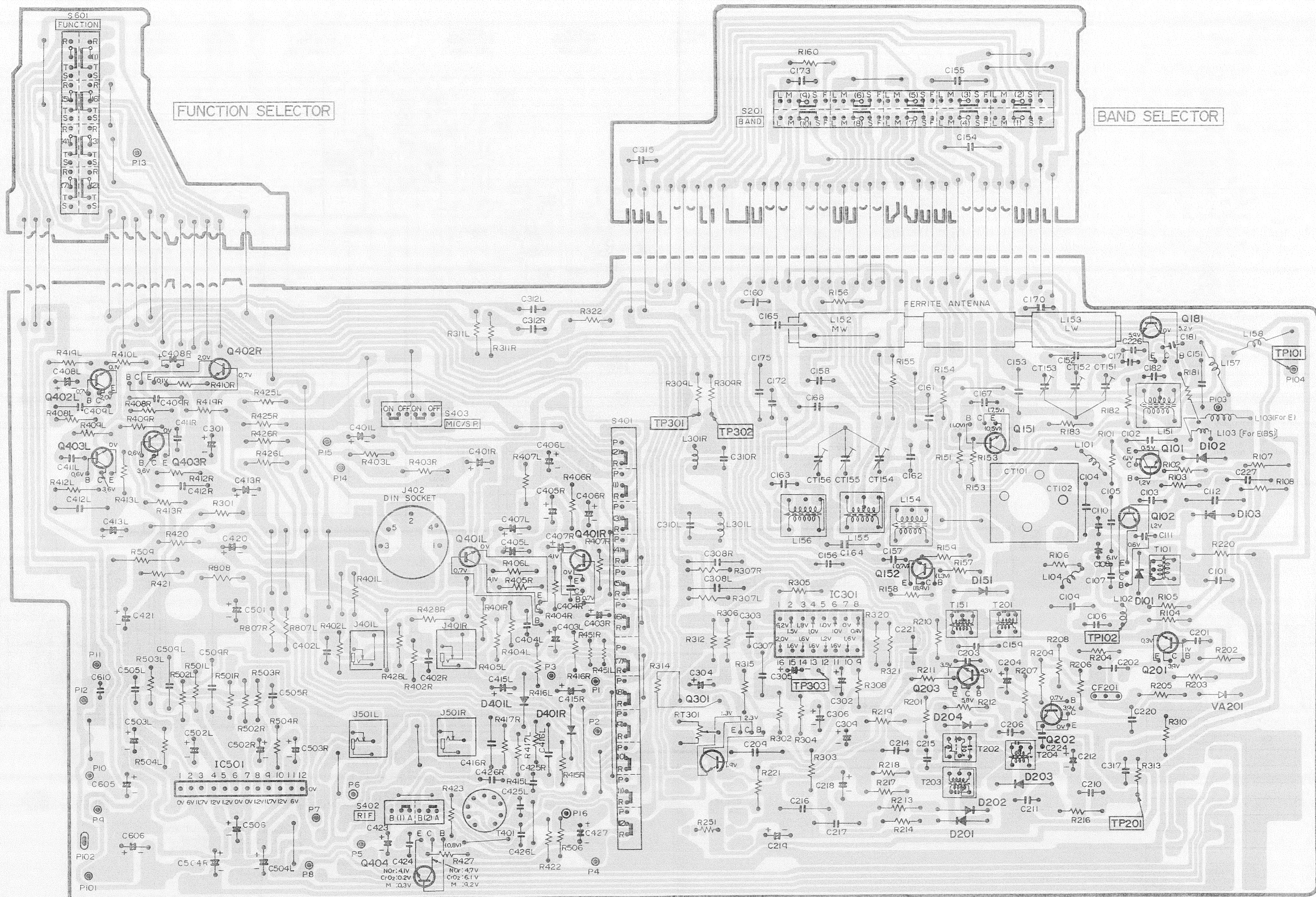
## SCHEMATIC DIAGRAM (Tuner Section)





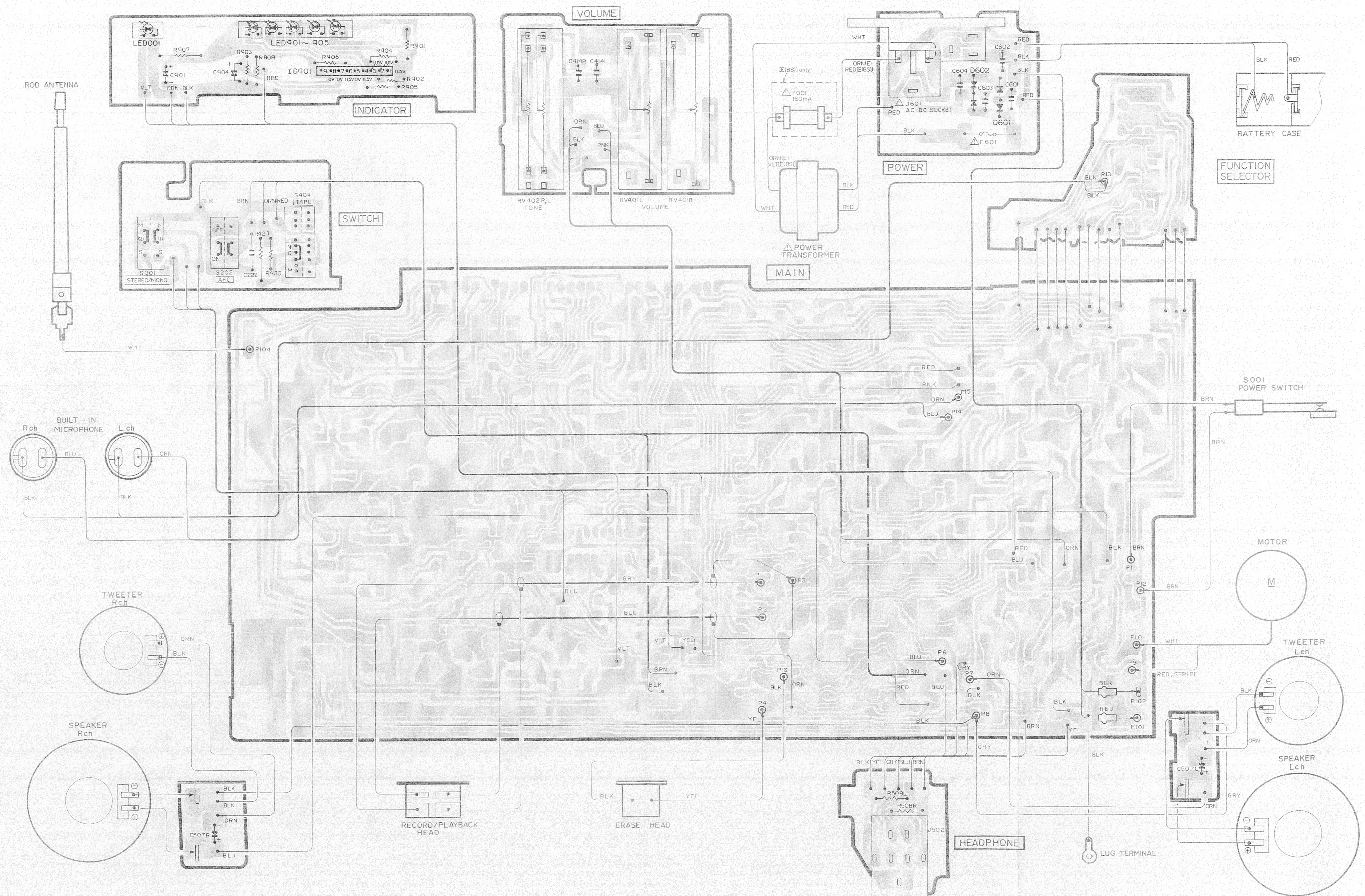


## CIRCUIT BOARD DIAGRAM





WIRING DIAGRAM

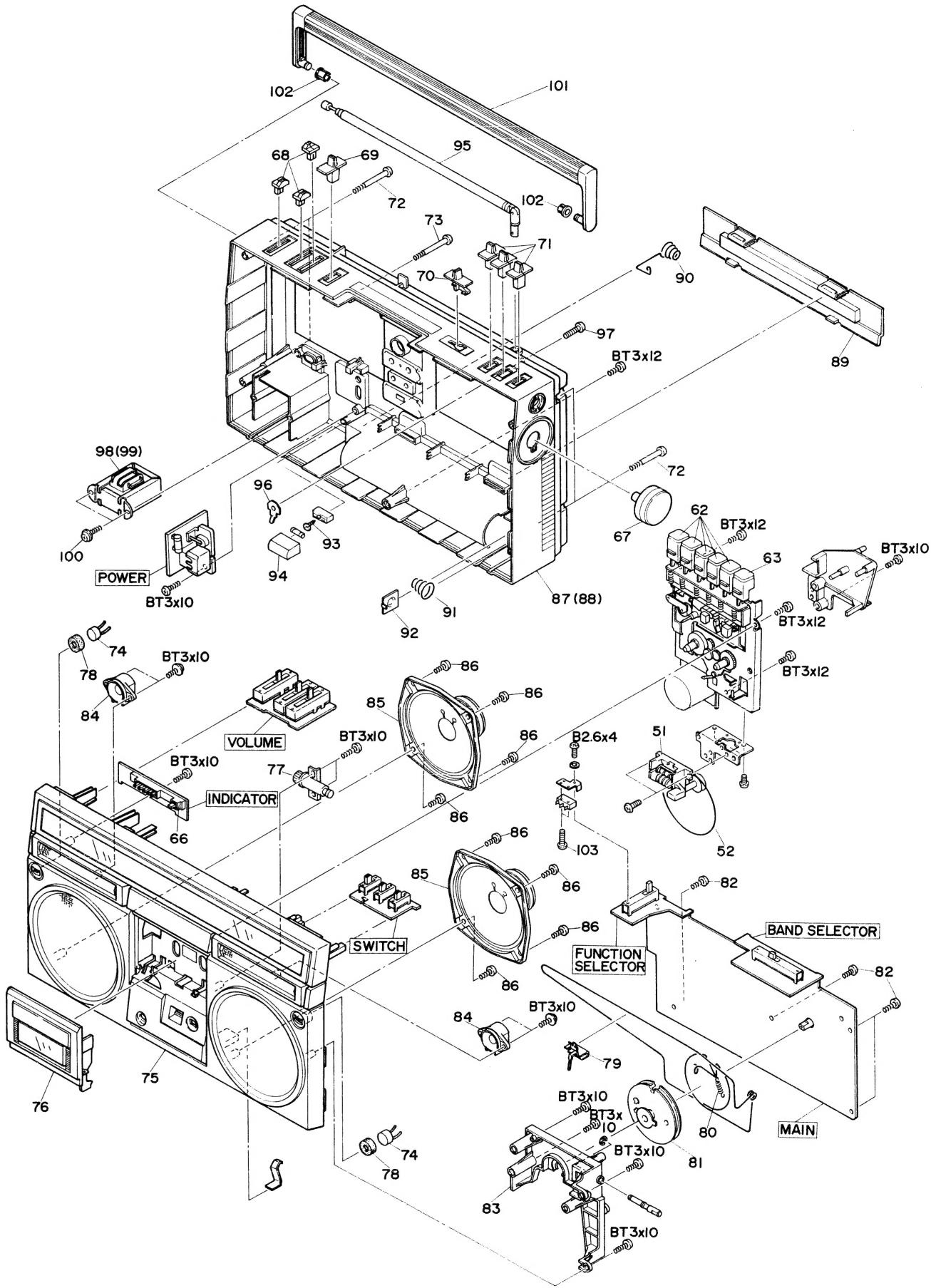




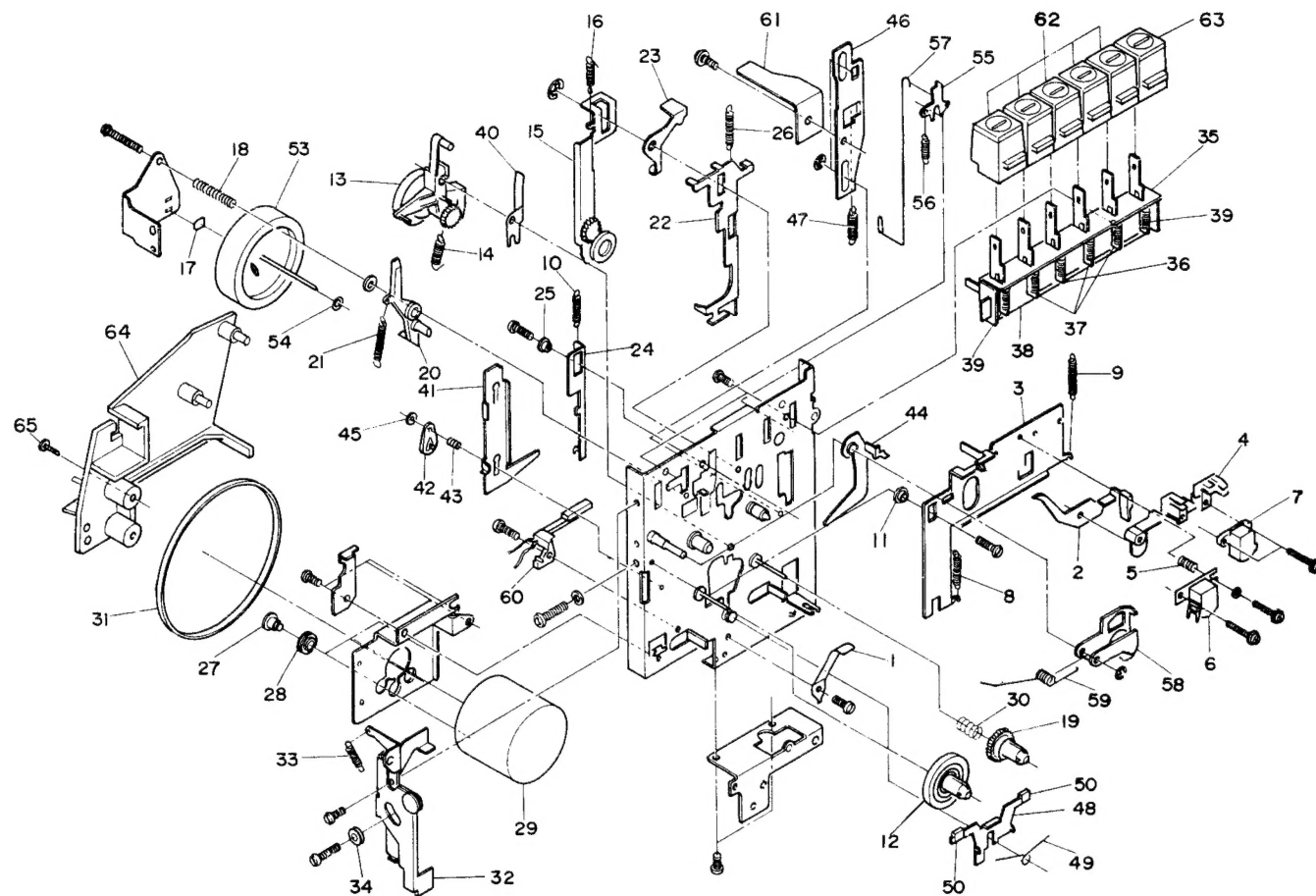
REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS					
C102	0208125	CERAMIC (RESISTOR SHAPE) 4.7PF+-5%	D201	5331052	DIODE 1K60RLF-2
C104	0208133	CERAMIC DISC (RESISTOR SHAPE) 22PF+-5%	D202	5331052	DIODE 1K60RLF-2
C105	0208125	CERAMIC (RESISTOR SHAPE) 4.7PF+-5%	D203	5331052	DIODE 1K60RLF-2
C108	0246427	CERAMIC DISC 7PF+-0.5PF(NP-0)	D204	5330131	DIODE 1S2076
C109	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	D401LR	5331052	DIODE 1K60RLF-2
C110	0248476	CERAMIC, DISCAL CAPACITOR 6PF+-0.5PF	D502	5330133	DIODE 1S2076
C111	0246430	CERAMIC, DISCAL CAPACITOR 10PF 0.5PF	D601	5331452	DIODE SRN02-100HLF
C112	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	D602	5331451	DIODE SRP02
C151	0208127	CERAMIC (RESISTOR SHAPE) 6.8PF+-5%	IC301	5350683	IC HA11227
C151-156	0283565	VARIABLE CAPACITOR	IC501	5352971	IC $\mu$ PC1277H
C152	0208124	CERAMIC (RESISTOR SHAPE) 3.3PF+-5%	IC901	5352571	IC BA6124
C153	0208135	CERAMIC DISC (RESISTOR SHAPE) 33PF+-5%	LED001	5380593	LED LN217RP
C154	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	LED901-905	5380681	LED GL-105R53
C155	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	Q101	5322551	TRANSISTOR HIT9016G
C159	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	Q102	5322551	TRANSISTOR HIT9016G
C161	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	Q151	5322551	TRANSISTOR HIT9016G
C164	0208154	CERAMIC(RESISTOR SHAPE) 3.3PF+-10%	Q152	5321281	TRANSISTOR SILICON 2SC1675-L 230MHZ 200M
C165	0208159	CERAMIC (RESISTOR SHAPE) 10PF+-10%	Q181	5321282	TRANSISTOR 2SC1675K (E)
C171	0208158	CERAMIC (RESISTOR SHAPE) 8.2PF+-10%	Q201	5321282	TRANSISTOR 2SC1675K
C172	0246462	CERAMIC, DISCAL CAPACITOR 82PF 10%	Q202	5321282	TRANSISTOR 2SC1675K
C209	0209004	CERAMIC DISC (RESISTOR SHAPE) 330PF +-10%	Q203	5321281	TRANSISTOR SILICON 2SC1675-L 230MHZ 200M
C216	0209005	CERAMIC DISC (RESISTOR SHAPE) 390PF +-10%	Q301	5322791	TRANSISTOR 2SC1684R
C217	0209005	CERAMIC DISC (RESISTOR SHAPE) 390PF +-10%	Q401LR	5322591	TRANSISTOR HIT9014N-C
C222	0208138	CERAMIC DISC (RESISTOR SHAPE) 680PF +-16%	Q402LR	5322791	TRANSISTOR 2SC1684R
C307	0249537	CERAMIC DISC 470PF+-5%(NP-0)	Q403LR	5322791	TRANSISTOR 2SC1684R
C308LR	0209027	CERAMIC (RESISTOR SHAPE) 0.01MF+-30%	Q404	5322791	TRANSISTOR 2SC1684R
C409LR	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10	VA201	5340202	VARISTOR VD1211
C412LR	0209002	CERAMIC DISC (RESISTOR SHAPE) 220PF +-10%	TRANSFORMERS		
C416LR	0209023	CERAMIC DISC (RESISTOR SHAPE) 3300P F+-30%	T101	5140111	FM IF TRANSFORMER
C509LR	0209023	CERAMIC DISC (RESISTOR SHAPE) 3300P F+-30%	T151	5130211	AM IF TRANSFORMER
PVC	5052331	VARIABLE CAPACITOR	T201	5130212	AM IF TRANSFORMER
RESISTORS			T202	5140112	FM DISCRIMINATOR
RT501	5007541	SEMI VARIABLE 10K OHM	T203	5140113	FM DISCRIMINATOR
RV401LR	5020111	VARIABLE RESISTOR 10K OHM(B)	T204	5130213	AM IF TRANSFORMER
RV402LR	5020121	VARIABLE RESISTOR 10K OHM(A)	T401	5260481	OSCILLATOR COIL
SEMI-CONDUCTORS			COILS		
D101	5330131	DIODE 1S2076	L101	5127083	FM RF COIL
D102	5330131	DIODE 1S2076	L102	5152162	CHOKER COIL
D103	5330661	DIODE SILICON 1S2790	L103	5127131	CHOKER COIL 0.5 MICRO H (E(BS))
D151	5331052	DIODE 1K60RLF-2	L104	5127082	FM OSCILLATOR COIL
			L151	5123771	SW ANT COIL
			L152	5113631	FERRITE ANTENNA
			L153	5113631	FERRITE ANTENNA
			L154	5123772	SW OSCILLATOR COIL
			L155	5120319	MW OSCILLATOR COIL
			L156	5120466	LW OSCILLATOR COIL
			L157	5127131	CHOKER COIL 0.5 MICRO H

EXPLODED VIEW (Cabinet)



## EXPLODED VIEW (Mechanism-TN-27VS-107)



Note : Components marked without numbers in this drawing are not specified as replacement parts.

Type of head				
P	Pan head screw	BT	Binding head tapping screw	T
F	Flat countersunk head screw	BL	Bolt	T
B	Binding head screw	W	Washer	⊙
T	Round head tapping screw	E	"E" ring	⊙
Length (L mm)				
Diameter (D mm)				

When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.

## REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
COILS					
L158	5127131	CHOKE COIL 0.5MICRO H	24	7321011	PLAY SLIDE LEVER
L301LR	5152451	TRAP COIL	25	7547691	COLLER
MISCELLANEOUS					
	5659121	BACK COVER	26	6541791	SPRING
CF201	5160341	CERAMIC FILTER 10.7MHZ	27	7547561	SPECIAL SCREW
△ F001	5721013	FUSE 160MA (E(BS))	28	6576331	MOTOR RUBBER
△ F601	5721061	FUSE 1.6A	29	5576482	MOTOR ASSEMBLY
J401LR	5673241	JACK-3.5MMD (MIC)	30	6305581	BACK TENSION SPRING
J402	5653211	DIN SOCKET	31	6357411	FLYWHEEL WELT
J501LR	5673241	JACK-3.5MMD (EXT. SP.)	32	7321951	EJECT LEVER ASSEMBLY
J502	5674243	HEADPHONE SOCKET	33	6540761	EJECT LEVER SPRING
△ J601	5653241	AC-DC SOCKET	34	7547491	COLLER
S001	5603381	LEAF SWITCH (POWER)	35	7128931	BUTTON ASSEMBLY
S201	5625071	SLIDE SWITCH (BAND)	36	6541081	SPRING
S202	5623761	SLIDE SWITCH (AFC)	37	6540751	SPRING
S301	5623761	SLIDE SWITCH (STEREO/MONO)	38	6540791	SPRING
S401	5623751	SLIDE SWITCH (REC/P.B.)	39	6540781	SPRING
S402	5622171	SLIDE SWITCH (RIF)	40	6533201	LEAF SPRING
S403	5622171	SLIDE SWITCH (MIC/SP.)	41	7321251	PAUSE SLIDE LEVER ASSEMBLY
S404	5624371	SLIDE SWITCH (TAPE SELECTOR)	42	6757261	PAUSE LEVER
S601	5624221	SLIDE SWITCH (FUNCTION)	43	6305601	PAUSE LEVER SPRING
FOR ACCESSORIES					
△	5747321	POWER CORD (E)	44	7320721	ARM LEVER
△	5746341	POWER CORD (E(BS))	45	7787431	NYLON WASHER
FOR CASSETTE DECK ASSEMBLY (TN-27VS-107)					
1	6533421	PACK SPRING	46	7320831	RECORD SLIDE LEVER
2	7337041	PICK UP PLATE ASSEMBLY	47	6540941	RECORD LEVER SPRING
3	7320961	HEAD PLATE	48	7320741	BRAKE ARM
4	6757321	HEAD BLOCK	49	6545791	SPRING
5	6520251	SPRING	50	6587151	BRAKE SHOE
6	5444871	RECORD PLAYBACK HEAD	51	5559371	COUNTER
7	5445301	ERASE HEAD	52	6354961	COUNTER BELT
8	6540831	HEAD PLATE SPRING (R)	53	6373471	FLYWHEEL
9	6540821	HEAD PLATE SPRING (L)	54	7787451	NYLON WASHER
10	6540841	SPRING	55	7320971	RECORD SAFETY LEVER
11	7547611	COLLER	56	6541781	SPRING
12	6413791	TAKE UP REEL ASSEMBLY	57	7547671	RECORD SAFETY SPORKE ASSEMBLY
13	6413801	RF CLUTCH ASSEMBLY	58	6383591	PRESSURE ROLLER ARM ASSEMBLY
14	6540891	SPRING	59	6545851	SPRING
15	7321241	F.F IDLER ARM ASSEMBLY	60 (S001)	5603381	LEAF SWITCH
16	6540861	SPRING	FOR CASSETTE DECK ASSEMBLY (B)		
17	6765101	FLYWHEEL BEARING	61	6769661	RECORD LEVER
18	6305641	THRUST SPRING	62	6060411	CASSETTE BUTTON
19	6413771	SUPPLY REEL	63	6060412	CASSETTE BUTTON (REC)
20	6757361	AUTO STOP LEVER	64	6769491	P.C.B. HOLDER
21	6541731	SPRING	65	0741308	BIND SCREW-2.6MMDX8MM
22	7320991	MAIN PLATE	66	6769501	LED HOLDER
23	7321001	REWIND ARM	MISCELLANEOUS		
			67	6283372	TUNING KNOB ASSEMBLY
			68	6292202	SLIDE KNOB (TONE,VOLUME)
			69	6290892	SLIDE KNOB (FUNCTION)
			70	6292142	SLIDE KNOB (BAND)

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MISCELLANEOUS			87	6107913	REAR CASE ASSEMBLY (E)
71	6292151	SLIDE KNOB (MODE, AFC, TAPE)	88	6107915	REAR CASE ASSEMBLY [E(BS)]
72	7781148	BT SCREW-3MMDX50MM	89	6174291	BATTERY LID ASSEMBLY
73	7781147	BT BIND HEAD SCREW-3MMDX30MM	90	6308961	BATTERY SPRING
74	5421501	BUILT IN MICROPHONE	91	0681129	SPRING A
75	6107732	FRONT CASE ASSEMBLY	92	7450344	BATTERY TERMINAL
76	6093631	CASSETTE LID	93	7780185	PAN HEAD U TIGHTENING SCREW-2.6MMDX 6MM [E(BS)]
77	6763961	GEAR DAMPER ASSEMBLY	94	6746881	FUSE COVER [E(BS)]
78	6570221	MICROPHONE HOLDER	95	5752681	ROD ANTENNA
79	6394631	POINTER	96	5681361	ANTENNA TERMINAL
80	6316231	SPRING M	97	8744412	BINDING SCREW 3MMDX12MM
81	6422621	PULLEY	△ 98	5213111	POWER TRANSFORMER (E)
82	8699410	BT BIND HEAD SCREW-3MMDX10MM (BLACK)	△ 99	5213112	POWER TRANSFORMER [E(BS)]
83	6769481	PULLEY HOLDER ASSEMBLY	100	7781132	BT SCREW-3MMDX10MM
84	5409102	SPEAKER-3CM	101	6334561	HANDLE ASSEMBLY
85	5406771	SPEAKER-12CM	102	6763912	HANDLE PIECE
86	7781133	BT SCREW-3MMDX8MM	103	7782431	PAN HEAD SCREW-2.3MMDX10MM



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